

PATENT CLAIMS

1. Coupling/brake combination, characterized in that the assembly is designed to form a so-called lantern (connector member) accommodating a static current-actuated (spring pressure actuated) integrated brake and a central hub (e.g. bellows coupling or plug-in coupling or shaft having a hollow shaft section) inserted between the input side (motor) and the output side (transmission/spindle or the like), with the brake located on the power output side (transmission/spindle) of the assembly and the assembly being designed so that the end faces of both the input shaft (motor) and the output shaft (transmission/spindle or the like) are in close proximity to each other inside the central hub so as to obtain the shortest possible constructional length of the entire assembly.
2. Coupling/brake combination as in claim 1, characterized in that torque transmission from the input (motor shaft) to the output (hub 15) is effected by an elastically flexible coupling such as a bellows coupling (18) and an associated clamp ring (12), said coupling having a diameter small enough to fit inside the center of the brake and to bring the end faces of both shafts to the closest proximity possible.
3. Coupling/brake combination as in claim 1, characterized by an adjustment ring (23) having a variable rotary position so as to enable clamp screw (32) to be released through radial bore (22) in any rotary position of output clamp ring (12) for installing a new motor in case of a defect.
4. Coupling/brake combination as in claim 1, characterized in that hub (15) is formed to have an axially projecting stub shaft (34, Fig. 6), with the motor shaft being adapted to be introduced directly into a bore (36) in hub (15) and to be clamped in place by means of a clamp ring (37).

5. Coupling/brake combination as in claim 4, characterized in that the hub is centered by an additional bearing assembly (35), said bearing assembly being sealed, and in that the possibility exists of designing brake flange (10) to be broader to accommodate an additional seal for protection of the friction liners from oil.

6. Coupling/brake combination as in claim 1 or 4, characterized in that clamp ring (12) is formed to have therein a groove (39) receiving a plurality of externally threaded pins (38) distributed along the ring periphery so as to fix the axial position of the bellows for the assembly and disassembly of motor shaft (17) and prevent it from being crushed or overstretched during assembly.

7. Coupling/brake combination as in any of claims 4-6, characterized by an additional gap (40) disposed between coil carrier housing (5) and clamp ring (12) in a manner such that the gap provides an appropriate radial fixing of the bellows coupling to secure it against excessive radial deflection.

8. Coupling/brake combination as in claim 1, characterized in that torque is transmitted from the input side (motor shaft) to the output side (15) by means of an elastically flexible coupling such as a plug-in coupling (41) having an elastic star member (42), with said coupling having a diameter small enough to fit in the brake center and to get the end faces of the two shafts to lie in the closest proximity possible.

9. Coupling/brake combination as in claim 8, characterized in that torque is transmitted from the input (motor shaft) to the output (15) by means of an elastically flexible coupling such as a plug-in coupling (41) having an elastic star member (42), with hub (15) provided with a tensioning ring (43) and having external teeth to receive rotor (8) of the brake for torque transmission.

10. Coupling/brake combination as in any of claims 8 or 9, characterized in that brake flange (10) has a sealing flange (45) inserted therein which receives an annular seal to form a seal against tensioning ring (43) to protect friction liners (9) from dirt and oil.

11. Coupling/brake combination as in any of claims 1-10, characterized in that the elastically flexible bellows coupling or star-type plug-in coupling has attached thereto an overload clutch (49) for disconnecting the drive system in response to overload via an initiator/sensor (50).

12. Coupling/brake combination as in any of claims 1-11, characterized by a second set of magnetic coil (51), armature disc (52) and rotor (53) provided inside the coupling/brake combination to form a redundant brake system.

13. Coupling/brake combination as in any of claims 1-12, characterized by a junction box (47) affixed thereto and housing a break release monitoring system (48) using a microswitch, causing the movement of armature disc (7) to actuate microswitch (48) to issue a signal indicating whether the brake is in the disengaged or engaged condition.